

SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF MARCH, 1918.

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PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds for March, 1918, are graphically shown on Chart VII, while the means at the several stations, with the departures from the normal, are shown in Tables I and III.

The month opened with pressure considerably above the normal over all the interior portions of the country, but somewhat below in the British Northwest. During the following few days there was a general fall in pressure over most districts and by the 5th pressure well below normal had overspread the interior districts, but it was rising in the far Northwest. No important changes in pressure occurred thereafter until near the end of the first decade when a marked depression appeared in the Middle Plains region and moved rapidly eastward to the Atlantic Coast, followed closely by an extensive high area which likewise moved rapidly to the coast districts.

Early in the second decade low pressure again developed in the Central Western districts and by the middle of the month had passed to the Canadian Maritime Provinces, at which time pressure far above normal was moving into the middle Rocky Mountain and adjacent districts. This area quickly overspread the central and eastern portions of the country, but with diminishing intensity, and by the end of the decade pressure was again below normal over much of the country.

During the last decade of the month pressure changes were not unusual, but there was a general tendency toward high pressure in the Lakes region and over the districts to the southward, until near the close of the month.

The average pressures for the month were above the normal over practically all southern districts and below the normal over most of the far Northern States and in the adjoining portions of Canada, the negative departures being quite large in the Northwest Provinces.

The general pressure distribution favored warm southerly winds over the greater part of the country, the results of which are well illustrated in the chart showing the departures of the mean temperatures of the month from the normal.

TEMPERATURE.

Pleasant weather prevailed in most sections of the country during the greater part of the first week, but early in the second week there was a decided drop in temperature throughout the Central States and lower Lakes region. Somewhat warmer weather followed until near the end of the week, when another fall in temperature occurred but less marked than that during the early part of the week. Generally mild weather prevailed much of the time throughout the remainder of the month, although frosts occurred as far south as Arkansas on the 25th, and in North Carolina during the last few days of the month.

The average temperature for the month was above the normal in practically all portions of the country, the maximum departures exceeding 15° in portions of Minnesota and North Dakota, and in the adjoining Canadian Provinces the excess was even greater. Over most of the principal winter-wheat and corn growing sections, the average temperature was from 6° to 10° above the normal, while farther south in the cotton region the averages were

somewhat less. In the extreme northwest and northeast sections there were small areas with mean temperature slightly less than normal.

Maximum temperatures above 90° were observed at points in the Southwest, but they were not higher than usually recorded in March, save in a few instances. While no extremely low temperatures were recorded only the more Southern States were entirely free from freezing temperature at some time during the month. In the more northern districts temperatures were occasionally below zero during the early part of the month, and to the northward of the Lake Superior region temperatures as much as 30° below zero were reported.

No important damage from frost was reported during the month, although some injury to early fruits was indicated in portions of Virginia and in Northern California.

PRECIPITATION.

The month opened with moderate precipitation in eastern Texas, portions of the central Mississippi and Ohio Valleys, the lower Lakes region, and to the eastward. After a few days of fair weather light rain again occurred in the central Mississippi Valley and also in Oklahoma, and the North Pacific States, and toward the latter part of the week there was generally light rain or snow in most northern and eastern sections of the country.

During the early part of the second week general rain or snow, accompanied by high winds, occurred in the Central States and lower Lakes region. Rain, rather heavy at times, prevailed during the second week, and again throughout much of the fourth week, in the Pacific States. During the latter part of the second week there was moderate rain in the Central Valleys, and about the middle of the month precipitation occurred in the Lakes region and to the eastward. A storm moved slowly over the Gulf and South Atlantic States during the next several days, causing unsettled weather throughout that region, and light to moderate rain fell over the Great Plains area during the last few days of the month under the influence of a disturbance that prevailed in the Southwest. The month closed with generally fair weather, except in the coastal portion of the East Gulf States, where there was light rain.

The month as a whole was generally less stormy than is usual for March, especially during the latter half. The total rainfall was slightly over 2 inches in the northwestern and southeastern portions of the cotton area, but in the central portions the rainfall was less than 1 inch, and was less than one-half inch in parts of western Alabama and eastern Mississippi, while in a small area in southeastern Oklahoma it was over 4 inches. Precipitation was considerably less than normal in most of the Southern States, also in Missouri, and slightly deficient in the other principal winter-wheat States. It was likewise deficient in most of the corn-growing districts, and slightly less than normal in the spring-wheat area. The rainfall was somewhat above the normal in Kansas and in southern California it was greater than is usually reported in March, but it was deficient in northern California and Oregon and in eastern Washington. Precipitation was below the normal in Texas, but generally well distributed.

SNOWFALL.

Considerable snow fell during the month in northern New England, in the Adirondacks region of New York, the upper Lakes region, and in much of the West, but by the close of the month the ground east of the Rocky Mountains, except in northern New England, was gener-

ally bare. In the mountains of the West only the higher elevations and protected slopes were covered at the end of the month. As a rule, the accumulated depths were materially less than usual, except in some of the more northern districts. In the mountains of California and adjoining portions of Oregon and Nevada the winter snowfall as a whole was far less than usual and much of that on the ground at the end of the month was received late in the season and therefore in a condition to quickly melt with the advent of warm weather.

RELATIVE HUMIDITY.

The general warmth of the month was prominently reflected in the relative humidity which was nearly everywhere below the normal, the deficiencies being most pronounced at the evening observations and throughout the interior and north Central districts. In portions of the Ohio, Mississippi, and Missouri Valleys the deficiencies ranged from 15 to 20 per cent or more.

GENERAL SUMMARY.

March, 1918, was markedly favorable for outdoor work in nearly all parts of the country. The early advent of winter and the long period during which severe cold held sway permitted of little work usually common to the colder portion of the year. As a result the beginning of spring found this work largely still untouched, but by the end of March, due to favorable weather, much progress had been made and in some sections spring work was farther advanced than usual.

The weather was unusually favorable for wheat and other winter grains, and these crops made marked improvement in most sections, despite their unfavorable conditions at the beginning of the winter.

Good progress was made in preparing for the cotton and corn crops and there was some planting in the more southern districts. The planting of potatoes and truck crops made good progress in southern and central districts. Except for minor damage to fruits, mostly peaches, due to the severe cold during the winter, fruit prospects were generally promising in all parts of the country.

Average accumulated departures for March, 1918.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	° F.	° F.	° F.	Ins.	Ins.	Ins.	0-10.	P. ct.		
New England.....	33.2	+0.4	-10.4	2.13	-1.70	-3.40	5.3	-0.4	72	-3
Middle Atlantic.....	44.8	+4.8	-3.6	2.81	-0.80	-2.10	4.7	-1.0	67	-6
South Atlantic.....	59.1	+5.2	+3.1	1.93	-2.40	-8.10	5.1	+0.2	73	-2
Florida Peninsula.....	73.2	+3.0	+4.1	1.68	-0.60	-3.30	3.3	-0.4	76	-2
East Gulf.....	63.7	+6.5	+5.8	0.86	-4.90	-6.20	5.1	0.0	70	-5
West Gulf.....	62.7	+4.8	+0.4	1.26	-1.70	-4.70	5.0	-0.1	68	-4
Ohio Valley and Tennessee.....	50.2	+6.3	-3.4	1.99	-2.20	-2.80	5.0	-1.1	65	-7
Lower Lakes.....	37.3	+4.4	-6.2	2.33	-0.30	-0.30	4.8	-1.7	70	-6
Upper Lakes.....	33.5	+6.2	-5.8	1.31	-0.70	+0.20	4.5	-1.5	74	-4
North Dakota.....	35.6	+14.7	+14.1	0.48	-0.50	-0.80	5.0	-0.5	70	-8
Upper Mississippi Valley.....	44.9	+8.9	+0.3	-1.15	-1.30	-2.20	4.6	-1.1	64	-10
Missouri Valley.....	46.9	+10.8	+6.1	0.92	-1.00	-1.00	4.3	-1.2	60	-10
Northern slope.....	39.4	+8.6	+7.3	0.72	-0.40	-0.20	5.3	-0.1	62	-6
Middle slope.....	49.7	+7.2	+4.4	1.46	0.00	+0.10	4.4	-0.3	54	-7
Southern slope.....	59.0	+5.8	+6.0	0.52	-0.40	-1.20	3.8	-0.5	41	-13
Southern Plateau.....	52.5	+1.6	+1.9	0.84	+0.30	+0.20	3.8	+0.1	47	+6
Middle Plateau.....	43.2	+2.3	+3.3	1.60	+0.40	+0.20	4.9	-0.1	56	-2
Northern Plateau.....	44.3	+4.1	+9.9	1.20	-0.40	-0.30	6.5	+0.7	60	-6
North Pacific.....	44.8	+0.1	+4.9	4.93	+0.30	+1.10	7.0	+0.4	78	-1
Middle Pacific.....	51.8	+0.5	+1.7	4.02	-0.20	-3.70	5.4	+0.1	73	-2
South Pacific.....	57.7	+2.6	+5.3	5.52	+2.90	+3.90	5.0	+0.4	71	0

WEATHER CONDITIONS OVER THE NORTH ATLANTIC OCEAN DURING MARCH, 1917.

The data presented are for March, 1917, and comparison and study of the same should be in connection with those appearing in the REVIEW for that month. Chart IX (XLVI-30) shows for March, 1917, the principal storm track and the averages of pressure, air temperature, water surface temperature, and prevailing direction of the winds at 7 a. m., 75th meridian time (Greenwich mean noon). Notes on the locations and courses of the more severe storms of the month are included in the following general summary.

PRESSURE.

The distribution of the average pressure for the month as shown on Chart IX, differed but little from the normal. The North Atlantic or Azores HIGH, and the Continental HIGH, were both well defined, although the former area was slightly east of its usual position. The Icelandic LOW was also nearly normal in intensity and position, while a second LOW was central about 300 miles northeast of St. John's, N. F.

The pressure changes from day to day were large, as is usually the case in March, and the means of the three decades of the month also differed considerably, as shown in the following table that gives for a number of selected 5° squares the average pressure for each of the three decades of the month as well as the highest and lowest individual readings reported within the respective squares.

Pressure over the North Atlantic Ocean during March, 1917, by 5-degree squares.

Position of 5-degree squares.		Decade means.			Extremes.			
					Highest.		Lowest.	
Latitude.	Longitude.	I.	II.	III.*	Pressure.	Date.	Pressure.	Date.
		Inches.	Inches.	Inches.	Inches.	March.	Inches.	March.
60-65 N	20-25 W	29.57	29.94	30.01	30.45	31	29.11	8
60-65 N	0-5 E	29.98	29.78	29.54	30.28	15	28.86	30
55-60 N	35-40 W	29.50	29.94	30.15	30.40	25, 31	28.89	6
50-55 N	55-60 W	29.93	29.75	30.00	30.40	26	29.20	19
50-55 N	25-30 W	29.41	29.90	30.25	30.62	25	28.86	6
50-55 N	0-5 W	29.67	29.99	29.82	30.56	16	29.23	30
45-50 N	65-70 W	30.14	29.92	29.94	30.41	3	29.40	23
45-50 N	45-50 W	29.74	29.59	29.97	30.38	27	29.23	7
45-50 N	15-20 W	29.40	30.12	30.21	30.61	18	28.89	6
40-45 N	55-60 W	30.11	29.66	29.93	30.50	26	29.18	19
40-45 N	30-35 W	29.66	29.97	30.30	30.60	25	29.20	8
40-45 N	0-5 W	29.65	30.20	29.98	30.60	16, 18	28.75	7
35-40 N	65-70 W	30.25	30.00	30.08	30.52	2	29.70	5
35-40 N	20-25 W	29.86	30.33	30.25	30.60	18, 25	29.51	6
35-40 N	5-10 W	29.90	30.30	30.11	30.40	13, 19	29.58	6
30-35 N	55-60 W	30.25	30.00	30.09	30.43	1	29.80	19
25-30 N	95-100 W	30.14	30.03	30.00	30.40	4	29.78	23
25-30 N	45-50 W	30.20	30.09	30.09	30.39	3	29.92	20
25-30 N	15-20 W	30.15	30.29	30.15	30.39	13	29.90	6
20-25 N	30-35 W	30.15	30.15	30.06	30.33	10	29.93	6
15-20 N	80-85 W	30.06	30.03	29.99	30.11	7	29.90	21

*Mean of last 11 days of month.

The mean and extreme values presented in the above table are based on the daily pressures determined by interpolation for each square on the MS. daily synoptic charts of the North Atlantic, compiled by the Marine Section of the Weather Bureau.

GALES.

The month taken as a whole was considerably less stormy than usual, as over practically the entire ocean the number of days on which gales were reported was below the normal. They were reported on from 2 to 5 days

over the northern steamer routes, the greatest number occurring over the eastern section.

On the evening of March 3 a LOW (*I* on Chart IX) of slight intensity, was central near Mobile, Ala. Moving in a northeasterly direction, it reached the coast of New Jersey on the morning of the 5th, the barometer at Atlantic City reading 29.60 inches. On the same day a HIGH with a crest of 30.44 inches covered the northwestern part of the Gulf of Mexico. Moderate and strong gales in the Gulf and along the American coast were the result of the steep gradient between these two areas, and one unusual feature was the fact that heavy northerly winds prevailed off the coasts of Alabama and western Florida, where the barometric readings ranged from 30.20 inches to 30.34 inches.

On the 6th the center of LOW *I* was near Halifax, N. S., and a number of vessels in the southerly quadrants encountered westerly gales of from 40 to 55 miles an hour, accompanied by hail. The disturbance then increased its rate of movement toward the North, and on the 7th the center was near latitude 50°, longitude 40°, where the barometer reading was about 29.06 inches. Gales of from 40 to 65 miles an hour still prevailed between the 40th and 50th parallels and the 40th and 60th meridians, while light to moderate winds were reported along the American coast. During the next 24 hours the easterly drift of the LOW was slight, and on the 8th it was central near latitude 48°, longitude 35°. The barometer reading at this point was 29.00 inches and the storm area was of about the same extent as on the previous day. The area of low pressure then began to fill in and on the 9th the center was indeterminate.

From the 3rd to the 6th there was a LOW of varying intensity that occupied the region between the European coast and the 30th meridian, and the 45th and 60th parallels. It moved slightly between these limits from day to day, and attained its greatest intensity on the 4th, when the center was near latitude 50°, longitude 15°, where the pressure was 28.80 inches. Gales of from 40 to 65 miles an hour covered an area extending to the 40th meridian on the West and Azores on the South. On the 5th and 6th this disturbance increased in extent and moderated somewhat in intensity, although strong gales with hail and snow were encountered on both of these dates. On the 7th Bordeaux, France, was near the center of a well developed LOW of 28.73 inches, but no vessel reports were received from the vicinity, and the force of the wind is not shown. From the 11th to the 14th a LOW remained off the coasts of Canada and Newfoundland, drifting slowly eastward; the center on the former date being near St. John's, N. F., and on the latter about 300 miles east of that place. No especially heavy winds were reported from that locality during the period, with the exception of one vessel that on the 12th recorded a southwesterly gale of 55 miles an hour near latitude 42°, longitude 42°.

On the 16th a LOW appeared near latitude 40, longitude 55; two vessels in the western quadrants encountered strong northwesterly gales, while moderate northerly winds were the rule along the American coast. This disturbance moved about 5 degrees toward the east during the next 24 hours, and the winds gradually decreased in force. It continued its slow easterly drift, and on the 18th was central near latitude 40°, longitude

45°, the conditions of wind and weather being about the same as on the previous day.

On the 18th a second area of low pressure covered the greater part of the Province of Quebec, the barometric reading at Chatham being 29.24 inches. Moderate westerly gales were encountered along the 40th parallel, between the 60th and 65th meridians, while in the waters adjacent to the American coast the force of the wind was considerably less. On the 19th this LOW was central in Newfoundland, and had increased considerably in extent, the isobar of 29.2 inches extending from the 40th to 55th parallels, while gales of from 40 to 55 miles an hour occurred over a larger area than the day before. On the 20th the center of this low was about 300 miles northeast of its position on the 19th, the conditions of wind and weather having changed but little. On the 22d a LOW of moderate intensity was central near latitude 40°, longitude 57°. This moved slowly toward the northeast, increasing rapidly in intensity, and on the 23d the center was near latitude 45°, longitude 51°. A number of vessels encountered heavy gales in the southwesterly quadrants, and northwesterly winds of 40 miles an hour extended as far south as the Bermudas. This disturbance curved slightly toward the north, and on the 24th the center was near St. John's, N. F., the weather conditions remaining practically unchanged. One vessel near Hatteras reported a gale of 40 miles an hour, while a number of others in the vicinity experienced only light to moderate winds. From the 25th to 27th the pressure gradients were comparatively weak, and no disturbance of importance appeared on the chart.

On the 28th a moderate LOW covered a portion of the Province of Quebec, but no heavy winds were reported from the vicinity. On the same day a second LOW was apparently central somewhere between Iceland and the Scandinavian Peninsula, although it was impossible to determine the exact position on account of lack of observations. Westerly and northwesterly gales covered quite an extended area between the 54th and 59th parallels, east of the 45th meridian, the maximum velocity being 64 miles an hour. On the 29th this LOW surrounded the Shetland Islands, where the barometer reading was 28.83 inches. Only one vessel report was received from the waters adjacent to the European coast, so it is impossible to state just what the conditions were in the vicinity, although a number of vessels on the steamer lanes between the 20th and 33d meridian encountered strong northwesterly gales, indicating that the storm area was of about the same extent as on the day before. This LOW evidently drifted slowly eastward during the next two days, although so few vessel reports were received from these waters that it was difficult to plot the center accurately, which on the 31st was apparently near Skudesnaes, Norway, where the barometric reading was 29.03 inches. On the 30th the force of the wind was about the same as on two previous days, while by the 31st it had moderated considerably over the steamer lanes. On the 30th a second LOW of slight intensity covered the Gulf of St. Lawrence, and light to moderate winds and fog prevailed off the Banks of Newfoundland. On the 31st this disturbance was central near St. John's N. F., it had increased slightly in intensity, and winds of 40 miles an hour with snow were reported in the southerly quadrants and off the Virginia coast.

TEMPERATURE OF THE AIR.

The average monthly temperature of the air over the ocean was from 2 to 4 degrees above the normal in the waters adjacent to the American coast, and in the northern part of the Gulf of Mexico. Off the European coast the departures were only slightly positive, while over the greater part of the steamer lanes they ranged from 0° to -4°. In the region south of the 40th parallel, between the Bermudas and the Azores, as well as in the southern division of the Gulf of Mexico, the temperature was nearly normal.

The seasonal rise in temperature was quite marked, especially in the northern waters, where the average for the last decade of the month was considerably higher than that of the first. The daily fluctuations were also large, particularly off the coast of Labrador, where the temperature ranged from 16° on the 1st and 5th, to 38° on the 30th.

The following table gives the temperature departures for the month at a number of Canadian and United States Weather Bureau Stations, on the Atlantic and Gulf Coast.

	°F.		°F.
Sydney, C. B. I.	+1.3	Norfolk, Va.	-0.5
Chatham, N. B.	+2.5	Hatteras, N. C.	-0.2
Halifax, N. S.	+1.7	Charleston, S. C.	+2.2
Eastport, Me.	+0.5	Key West, Fla.	+2.4
Portland, Me.	+0.1	Tampa, Fla.	+3.4
Boston, Mass.	+2.2	Mobile, Ala.	+4.3
Nantucket, Mass.	-1.6	New Orleans, La.	+4.1
Block Island, R. I.	0.0	Galveston, Tex.	+1.0
New York, N. Y.	+1.2	Corpus Christi, Tex.	+0.5

WATER SURFACE TEMPERATURES.

The average monthly temperature of the surface water, as compared with the normal, varied considerably over different divisions of the ocean. The water was somewhat warmer than usual off the banks of Newfoundland, although there was a sudden fall in temperature eastward, as the departures ranged from +4 degrees at the 50th meridian to -4 degrees at the 35th. Small positive departures prevailed along the European coast and over the southeastern waters, while in the vicinity of the American coast and in the Gulf of Mexico they were variable, although slightly negative over the greater portion of this territory. The greatest daily fluctuations occurred off the coast of Labrador, where the water temperatures ranged from 23° on the 2d, to 48° on the 16th.

FOG.

Under normal conditions March shows considerable increase in the number of days with fog, as compared with February. For the month under discussion the reverse held true, as fog was only observed on three days off the banks of Newfoundland, where the normal percentage is from 40 to 45, and there was practically none off the American coast and over the steamer lanes.

HAIL AND SNOW.

The most frequent occurrence of hail and snow was in the two 5-degree squares between latitude 55°-60°, longitude 20°-30°, where the former was reported on six days and the latter on five. Both occurred on two days over the mid-section of the steamer routes, while none was recorded in the waters adjacent to the American coasts.

Winds of 50 mis./hr. (22.4 m./sec.) or over, during March, 1918.

Station.	Date.	Velocity.	Direction.	Station.	Date.	Velocity.	Direction.
		Mis./hr.				Mis./hr.	
Bismarck, N. Dak.	30	50	nw.	New York, N. Y.	11	52	nw.
Block Island, R. I.	3	62	nw.	Do.	15	76	nw.
Do.	10	60	nw.	Do.	17	58	w.
Do.	11	55	nw.	Norfolk, Va.	10	60	nw.
Do.	15	56	nw.	North Head, Wash.	17	72	se.
Buffalo, N. Y.	2	56	sw.	Do.	21	70	se.
Do.	3	52	nw.	Do.	22	50	sw.
Do.	12	60	sw.	Do.	23	58	se.
Do.	16	56	sw.	Do.	24	50	se.
Do.	17	54	sw.	Do.	25	50	s.
Canton, N. Y.	10	60	ne.	Oswego, N. Y.	15	50	ne.
Cheyenne, Wyo.	9	56	nw.	Peoria, Ill.	9	51	sw.
Do.	11	72	w.	Pittsburgh, Pa.	10	59	w.
Do.	13	68	w.	Point Reyes Light, Cal.	10	50	se.
Cincinnati, Ohio.	9	50	sw.	Do.	11	73	se.
Cleveland, Ohio.	10	65	nw.	Do.	17	55	se.
Columbia, Mo.	9	51	sw.	Do.	18	60	s.
Columbus, Ohio.	9	58	w.	Portland, Me.	3	56	nw.
Do.	10	70	nw.	Providence, R. I.	3	65	nw.
Do.	14	52	w.	Do.	15	54	nw.
Concordia, Kans.	9	52	nw.	St. Joseph, Mo.	9	56	nw.
Dayton, Ohio.	9	56	w.	St. Louis, Mo.	9	74	sw.
Do.	10	56	nw.	Sandusky, Ohio.	9	52	sw.
Dodge City, Kans.	9	51	nw.	Do.	10	56	nw.
Elkins, W. Va.	10	54	sw.	Sandy Hook, N. J.	3	56	nw.
Evansville, Ind.	9	58	sw.	Do.	10	71	nw.
Fort Wayne, Ind.	9	55	w.	Do.	15	57	nw.
Green Bay, Wis.	9	62	ne.	Sault Ste. Marie, Mich.	2	60	w.
Hannibal, Mo.	9	58	w.	Springfield, Ill.	9	50	sw.
Houghton, Mich.	2	54	w.	Springfield, Mo.	9	56	w.
Kansas City, Mo.	9	58	w.	Syracuse, N. Y.	3	52	nw.
Keokuk, Iowa.	9	52	sw.	Tatoosh Island, Wash.	17	50	s.
Lincoln, Nebr.	9	58	nw.	Do.	21	56	s.
Louisville, Ky.	9	68	sw.	Do.	24	54	s.
Modena, Utah.	8	52	w.	Do.	24	54	s.
Do.	12	50	sw.	Terre Haute, Ind.	9	56	sw.
Mount Tamalpais, Cal.	11	58	sw.	Trenton, N. J.	10	64	nw.
Do.	17	52	s.	Toledo, Ohio.	10	52	nw.
New Haven, Conn.	3	50	nw.	Topeka, Kans.	9	58	w.
New York, N. Y.	3	72	nw.	Wichita, Kans.	9	65	nw.
Do.	10	87	nw.				

CORRECTIONS TO WIND RECORDS AT PORTLAND, ME., AND BALTIMORE, MD., 1915-16.

The following corrections in the wind records at Baltimore, Md., and Portland, Me., are necessary on account of using an anemometer adjusted to record kilometers instead of miles, during portions of months and years indicated.

A.—Corrections to respective issues of Table I.

Baltimore, Md.

Month.	Total movement—		Maximum was—			Maximum should be—		
	Was—	Should be—	Velocity.	Direction.	Date.	Velocity.	Direction.	Date.
1915.								
February	6,617	4,919	36	n.	18	26	ne.	2
March	6,305	6,096	31	nw.	31	24	n.	8
April	5,722	5,555						
June	5,083	5,018						
July	4,739	4,718						
August	5,033	4,921						
September	4,382	4,299						
October	4,500	4,145						
November	4,651	4,637						
1916.								
January	6,825	5,256	36	n.	14	26	sw.	6
February	5,750	5,746						
April	5,821	5,264	48			30		
May	5,673	5,238	40			25		
June	5,227	5,171						
July	5,292	5,015	25	ne.	28	22	n.	5
September	6,460	4,730	44			27		
October	4,770	4,768						
November	4,800	4,724	29	nw.	30	25	sw.	24
December	4,876	4,827						
1917.								
January	4,227	4,224						
February	5,104	5,102						
March	6,119	5,833	39	sw.	29	28	sw.	5
April	9,125	5,671	44			27		
May	9,393	5,837	43			27		
June	6,349	4,640	48			30		

A.—Corrections to respective issues of Table I—Continued.

Portland, Me.

Month.	Total movement—		Maximum was—			Maximum should be—		
	Was—	Should be—	Velocity.	Direction.	Date.	Velocity.	Direction.	Date.
1916.								
October.....	Miles. 11,497	Miles. 7,324	Mis./hr. 63			Mis./hr. 39		
November.....	10,533	6,545	61			38		
December.....	7,821	7,614						
1917.								
January.....	9,810	6,818	66			42		
February.....	10,182	6,314	66			41		
March.....	13,003	8,080	69			43		
April.....	11,155	6,931	63			39		
May.....	13,294	8,260	63			39		
June.....	8,293	5,966	50			31		

B.—Corrections to table of excessive wind velocities; winds of 50 miles/hour (22.4 m./sec.) or over.

Portland, Me.

Month.	Recorded—			Should be—
	Date.	Velocity.	Direction.	
1916.				
October	14	Mis./hr. 63	nw.....	None.
November	11	61	nw.....	None.
1917.				
January	14	68	se.....	None.
February	5	66	nw.....	None.
March	28	69	se.....	None.
April	4	63	nw.....	None.
May	26	63	nw.....	None.
June	17	50	nw.....	None.

CONDENSED CLIMATOLOGICAL SUMMARY.

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course the number of such records is smaller than the total number of stations.

Condensed climatological summary of temperature and precipitation by section, March, 1918.

Section.	Temperature.						Precipitation.					
	Section average.	Departure from the normal.	Monthly extremes.				Section average.	Departure from the normal.	Greatest monthly.		Least monthly.	
			Station.	Highest.	Date.	Station.	Lowest.	Date.	Station.	Amount.	Station.	Amount.
Alabama.....	61.8	+ 6.2	2 stations.....	89	9†	St. Bernard.....	26	11	Fort Deposit.....	2.03	2 stations.....	0.00
Arizona.....	53.7	+ 2.0	Yuma Evap. Sta.....	94	31	Fort Valley.....	6	9	Spring Valley Range station.....	9.24	6 stations.....	0.00
Arkansas.....	57.9	+ 5.2	2 stations.....	96	17	Batesville.....	16	14	Centerpoint.....	5.64	Calico Rock.....	0.24
California.....	51.5	- 0.3	2 stations.....	96	30†	Portola.....	- 5	14	Squirrel Inn.....	19.87	Calexico.....	0.72
Colorado.....	39.2	+ 4.8	2 stations.....	88	11†	Dillon.....	- 23	16	Palisade Lake.....	7.05	2 stations.....	0.00
Florida.....	69.8	+ 4.2	4 stations.....	92	1†	2 stations.....	38	29†	Hypoluxo.....	6.43	Pensacola.....	0.32
Georgia.....	62.0	+ 5.5	Albany.....	90	1	Ramhurst.....	24	11	Brunswick.....	4.47	Montezuma.....	0.28
Hawaii (February).....	68.4	+ 0.4	Mabukona.....	89	1†	Glenwood.....	42	13	Honolulu.....	78.86	Waianae.....	2.11
Idaho.....	39.0	+ 2.6	Weiser.....	78	24	New Meadows.....	- 20	6	Oxford R. S.....	4.52	Hot Springs.....	0.14
Illinois.....	47.4	+ 7.7	White Hall.....	89	13	Mount Carroll.....	2	1	Chicago.....	2.05	Aledo.....	0.10
Indiana.....	46.4	+ 6.3	2 stations.....	83	21†	Howe.....	12	10	Greencastle.....	4.26	Elliston.....	0.37
Iowa.....	42.9	+ 9.6	Denison.....	85	19	Sibley.....	0	10	Dubuque.....	2.12	3 stations.....	T.
Kansas.....	49.8	+ 7.0	3 stations.....	90	12†	Tribune.....	1	1	Norwich.....	5.22	Hanover.....	0.32
Kentucky.....	51.6	+ 5.6	2 stations.....	85	13	Loretto.....	17	11	Catlettsburg.....	4.23	Leitchfield.....	0.23
Louisiana.....	66.1	+ 4.3	Angola.....	92	7	Robeline.....	29	17	Burrwood.....	5.89	Robeline.....	0.25
Maryland-Delaware.....	45.5	+ 3.2	Chewsville, Md.....	84	19	Deer Park, Md.....	8	11	Millford, Del.....	7.06	State Sanatorium.....	1.57
Michigan.....	33.7	+ 4.3	Pontiac.....	78	31	Humboldt.....	- 26	7	Bloomington.....	4.24	Eagle Harbor.....	0.13
Minnesota.....	35.6	+ 10.0	2 stations.....	77	30	Winton.....	- 24	1	Waseca.....	5.00	2 stations.....	0.00
Mississippi.....	62.8	+ 5.4	Angilla.....	90	9	2 stations.....	28	11	Pascagoula.....	2.46	3 stations.....	T.
Missouri.....	50.9	+ 7.8	Amoret (2).....	95	13	Bethany (2).....	8	1	Hollister.....	3.80	St. Charles.....	T.
Montana.....	37.0	+ 6.8	2 stations.....	79	25	Bowen.....	- 30	6	Butte.....	3.15	Foster.....	T.
Nebraska.....	44.8	+ 9.4	Kirkwood.....	89	30	Merriman.....	- 5	9	Hay Springs.....	2.00	Stanton.....	0.00
Nevada.....	42.1	+ 2.7	Las Vegas.....	88	31	Marietta Lake.....	- 5	9	Marietta Lake.....	7.45	Tecoma.....	0.00
New England.....	31.5	+ 1.0	Rutland, Mass.....	74	21	Pittsburg, N. H.....	- 34	16	Westboro, Mass.....	3.69	Winslow, Me.....	0.74
New Jersey.....	41.8	+ 3.8	Belvidere.....	82	19	Culvers Lake.....	0	11	Bridgeton.....	3.76	Newton.....	0.99
New Mexico.....	46.6	+ 2.3	Artesia.....	90	26	Elizabethtown.....	- 12	1	Bateman's ranch.....	5.31	7 stations.....	0.00
New York.....	34.3	+ 2.1	Port Jervis (4).....	77	19†	Raquette Lake.....	- 24	11	Jamestown.....	6.50	Morrisville.....	1.05
North Carolina.....	54.6	+ 4.3	3 stations.....	88	14	2 stations.....	16	11	Hot Springs.....	4.44	Wilmington.....	0.78
North Dakota.....	35.0	+ 12.4	Colgate.....	82	30	Marmarth.....	- 15	6	Melville.....	1.20	3 stations.....	0.00
Ohio.....	44.0	+ 5.0	6 stations.....	82	9†	Hillhouse.....	5	11	Ironton.....	5.24	Brilliant.....	0.70
Oklahoma.....	55.8	+ 3.7	Carnegie.....	97	12	Goodwell.....	12	1	Ada.....	6.69	Waurika.....	0.51
Oregon.....	43.9	+ 0.7	Williams.....	81	30	Crescent.....	- 5	15	Brookings.....	10.40	Big Eddy.....	0.12
Pennsylvania.....	41.6	+ 3.8	2 stations.....	82	19†	4 stations.....	0	11	Bradford.....	4.98	Saltsburg.....	0.87
Porto Rico.....	73.8	0.0	Humacao.....	96	31	Albion.....	46	25	Inabon Falls.....	8.00	2 stations.....	0.10
South Carolina.....	59.7	+ 4.9	Darlington.....	89	14	2 stations.....	29	11	Gaston Shoals.....	2.99	Kiffinham.....	0.69
South Dakota.....	40.6	+ 10.0	Wagner.....	86	25	Ellingson.....	- 14	6	Milbank.....	2.71	Menno (2).....	0.10
Tennessee.....	55.8	+ 6.5	3 stations.....	85	13	Mountain City.....	16	16	Newport.....	4.72	Pinewood.....	T.
Texas.....	62.8	+ 3.8	2 stations.....	101	13†	Romero.....	8	1	Ratcliff.....	5.16	8 stations.....	0.00
Utah.....	41.3	+ 2.8	St. George.....	81	31	2 stations.....	- 15	1	New Harmony.....	8.54	2 stations.....	0.00
Virginia.....	49.9	+ 4.7	Arcola.....	88	6	Burkes Garden.....	13	11	Hot Springs.....	6.92	Mayhurst.....	1.70
Washington.....	42.0	+ 0.3	Mottinger.....	80	30	Snyders Ranch.....	- 3	6	Forks.....	27.27	Sixprong.....	T.
West Virginia.....	46.5	+ 4.0	Wheeling.....	85	20	3 stations.....	9	11	Holcomb.....	9.37	2 stations.....	1.55
Wisconsin.....	35.3	+ 6.6	Shullsburg.....	78	18	Winter.....	- 32	10	La Crosse.....	2.74	Grantsburg.....	0.27
Wyoming.....	35.6	+ 6.0	Newcastle.....	82	26†	Lake Yellowstone.....	- 32	6	Kendall.....	3.42	Chugwater.....	T.

† Other dates also.

DESCRIPTION OF TABLES AND CHARTS.

(See MONTHLY WEATHER REVIEW, January, 1918, p. 48.)